

Institutional Controls Workshop Summary

October 24 - 26, 2001

Santa Fe, New Mexico

Purpose

The purpose of this workshop was to gather experts from U.S.EPA, other Federal Agencies, State, Tribal and local governments, community organizations, and others, to exchange ideas in several key subject areas involving institutional controls (ICs). This workshop provided participants an opportunity to network with other experts and develop a better understanding of some important IC issues. The Workshop also provided a forum in which innovative ideas and useful experiences could be shared.

A diverse group of participants took part in the workshop. The table below provides some summary information on the participants.

Organization	Number of Participants
EPA Regions	41
EPA Headquarters	11
Other Federal Agencies	4
Local Governments	8
Community Stakeholder Advocates	5
Tribal Governments	2
NGOs and Other Organizations	5
Total	89

This workshop was designed to build upon the key issues that emerged from an earlier workshop held in San Antonio, Texas from February 28 through March 2, 2001 on the implementation, monitoring and enforcement of ICs. This workshop was designed for participants to spend their time in a breakout session devoted to one of the following five main issues identified in San Antonio:

- I. Estimating the full life-cycle costs of ICs;
- II. Developing IC Implementation Plans;
- III. Example/model language for IC Documents;
- IV. Institutional Controls Tracking Systems and Approaches; and
- V. Communities and ICs.

Summary Findings

The following sections of this document contain detailed summaries of the points made in each of the breakout sessions. This section provides a summary of the key themes or issues from each of the breakout groups:

I. Estimating the full life-cycle costs of ICs

- All costs, including non-market and social costs, should be considered as part of the IC cost evaluation.
- IC cost estimates should be developed as early as possible utilizing the same level of detail as other remedy components, and be refined during remedy selection, at key decision points, or as new information emerges.
- The actual costs of ICs should be tracked and a standard set of cost elements developed as the basis for the development of future estimates.
- The methodology used to evaluate out-year IC costs should be appropriate to the expected funding mechanism employed. For example, NPV should only be used when a trust-fund type of funding mechanism is employed.
- Assumptions used in cost estimating, including discount rate, methodology, and duration, should reflect the specific situation under consideration.
- There is a need to require appropriate financial assurances that may be essential to the implementation, long-term effectiveness, and protectiveness of ICs.
- It is critical that measurable goals and corresponding incentives be developed to encourage agencies to improve their consideration, implementation, and evaluation of ICs.

II. Developing IC Implementation Plans

- Participants recommended that EPA involve the community and other stakeholders in the remedy selection process (e.g. that EPA "negotiate the remedy" with stakeholders).
- Early, thorough and good planning before the FS is needed. Guidance on developing an IC plan would be very useful. The group began an outline which identified the major components and key issues associated with IC planning.
- An IC is an essential part of the remedy and should be evaluated by the same evaluation/factors as other, engineered parts of the remedy. This is the only way

to provide a clear picture of implementability and cost that is comparable to analyses of engineered components of remedies.

- All stakeholders (federal, state/tribal, local, community, owners, etc.) should be involved early in the process to help establish relationships that may be carried throughout the entire IC process (i.e., from “cradle-to-grave”). Early rapport with community stakeholders should be developed during investigation.
- It is important to ensure that the IC plan takes into consideration local land use and development plans. EPA should consult with local government regarding future land use.
- Real estate expertise is needed. Real estate attorney expertise should be available early on in the IC planning and implementation process.
- There is a need to specifically define ICs in decision documents and carry those IC definitions throughout all documents (i.e. carry the IC thread into the ROD, CD, and O&M plan as specifically as possible and also as part of an annual reporting plan).
- There is a need for flexibility to amend and revise ICs (i.e., adaptive management).
- IC training should be provided from EPA to states/tribes/localities. In addition, there is a need for localities to provide training to the states and regions on local land use provisions.
- It is important to ensure that ICs stay in place with new owners/next door innocents, etc.

III. Example/model language for IC Documents

- This summary will be posted at a later date.

IV. Institutional Controls Tracking Systems and Approaches

- The main objective of an IC Tracking System should be to protect human health and the environment. All other objectives should aid in attaining this main objective.
- When developing an IC Tracking System it is important to know who the decision-makers will be within the context of the interested public, contaminated property owners, and local, state, and federal government agencies.

- Several potential methods of looking at ownership were raised with the understanding that different entities own the implementation, monitoring, and enforcement aspects of ICs. An IC Tracking System should allow for shared ownership among these groups.
- Capabilities and functions needed within an IC Tracking System should be discussed within the context of what human health and environmental professions need the system to do in order for them to perform their jobs. There is a major need for a sophisticated search and query function to allow for easy accessibility of data.
- Collection of data should be done with the objective in mind to prevent the system from becoming bogged down with unnecessary data. All data should be site specific. The thought to use the data to generate needed reports and documents was raised versus simply pulling the data from those reports into the system.
- Five workshop attendees representing regions, states, cities and localities shared their knowledge of their existing or developing IC tracking systems with the group. None of the systems met all the objectives, functions, or capabilities that had been discussed by the group; however, all were interested in sharing their systems and the possibility of integrating their systems with one another.
- A key need of an IC Tracking System is the potential for information sharing and integration. Possibilities for how this might be attained were discussed among the group members. Electronic integration of data was preferred; however, it was noted that this would require that all the systems would have to work from the same standard definitions.

V. Communities and ICs

- Trust is essential to community involvement.
- Communities need to be empowered – to know that they have a say and that they are listened to.
- EPA should reach out to the community with education and information (technical and non-technical) about ICs, the processes and their role.
- EPA should look at each community holistically. Not all communities are the same, and many communities have different definitions of “environment.” ICs are not the only concern at the community level.

- EPA should be aware of the history of a site and the local community.
- One-size does not fit all communities; each community involvement plan should reflect the culture, values and history of the specific community.
- EPA should approach community involvement with ICs in a “cradle-to-grave” fashion, meaning that involvement should begin very early in the process (pre-ROD) and continue long after EPA has completed remediation.
- ICs should be flexible (adaptive management) to accommodate changing land use needs by the community.
- EPA should create a community involvement plan that stresses early involvement, community needs, and a holistic approach.
- Tribes have unique legal and land use challenges around the issue of ICs that need to be examined specifically.

Cost Estimating Session Breakout Group Summary

This session focused on the issues associated with estimating the costs of establishing and maintaining institutional controls. The discussion and feedback was centered around five issues areas: (1) What costs should be included in IC cost estimates, (2) When is the right time to estimate/define the costs, (3) Who should develop the cost estimates and what tools can be provided to assist them, (4) How should the out-year cost evaluation be performed, and (5) Who pays for these costs in the future and what are the options for financing ICs.

What costs should be included in IC cost estimates?

EPA's interpretation of the NCP is that only direct costs should be included in a cost estimate. However, there are other indirect remedy costs associated with ICs. Beyond the engineering costs, there are a number of social and non-monetary costs that should be included to calculate the real costs of ICs. These would include annual and periodic operations and maintenance, enforcement, contingency funds, the potential costs of failure, long-term environmental modeling, monitoring of land use, cost to remove an IC, insurance and other third-party costs, long-term health monitoring, treatment of people exposed, stakeholder participation, security, takings or mitigation compensation, and others.

It was pointed out that there needs to be a focus on the minor costs, as these may be significant to a local or state government.

It was felt that additional guidance was necessary that would provide a series of best practices. It was also felt that additional training was needed on all levels on cost estimating.

Take Home Messages

All costs, including non-market and social costs, should be considered as part of the IC cost evaluation.

Future work should build upon the work completed by ICMA and the Environmental Law Institute.

When is the right time to estimate/define the costs?

There were a number of different suggestions on the appropriate time to estimate costs in the Superfund pipeline. These included as early as possible to continuous refinement through out the process, and even beyond the end of the process so long as the IC remains in place.

It was understood that as a site moves through the pipeline, information is refined, conditions change, and new alternatives may present themselves. The consensus was that as more information becomes available, such as information that would not have been known during the FS screening stage or during remedy selection, the initial estimate be refined and updated. It was also suggested that as conditions change, such as a fluctuation in the value of water or changes in

land use bordering the site, the estimate be refined.

It was also discussed that for each alternative proposed, such as during remedy selection, cost analysis should be completed for corresponding ICs.

Take Home Message

IC cost estimates should be developed as early as possible utilizing an equal level of detail as other remedy components, and refined during remedy selection, at key decision points, or as new information emerges.

Who should develop the cost estimates and what tools can be provided to assist them?

Several participants stated that a number of different parties should develop or participate as stakeholders in the development of IC cost estimates. These parties would include the party responsible for the IC, the property owner/operator/PRP, the project manager, any third party who has an interest in accurate costs, contractors with expertise, interested Federal agencies, the developer or prospective purchaser, and interested community groups, local government, and state government.

A series of tools were identified that would assist in the development of IC cost estimates. These tools included the development of a database tracking system that captures historic and projected future IC costs, and cost estimating guidance and cost elements.

Take Home Message

The actual costs of ICs should be tracked and a standard set of cost elements and guidance developed as the basis for development of future estimates.

How should the out-year cost evaluation be performed?

The discussion concerning out-year cost evaluation estimates focused on the methodology being employed by EPA, specifically on the use of financial assurances and the net-present value (NPV) method including discounting.

It was suggested that the methodology to estimate out-year costs should be dependent upon how the costs of the implementation and maintenance of the IC would be paid for. If there is a financial assurance in place that covers the IC and assures appropriate funds are available, then the NPV method would be appropriate. If there is no financial assurance, e.g. the costs of the site are funded by a government entity from yearly tax receipts, then NPV is not an appropriate method due to the effects of discounting and the underestimation of long-term costs.

Suggestions were made that the government and PRPs employ various types of financial assurance mechanisms, including insurance, risk coverage, trust funds, and others.

It was also suggested that if a site meets the appropriate criteria for employing the NPV method,

then it needs to more accurately reflect the realistic situation of the site including the use of something other than a 7% discount rate and an appropriate time frame.

Take Home Messages

The methodology used to evaluate out-year IC costs should be appropriate to the expected funding mechanism employed. For example, NPV should only be used when a trust-fund type of funding mechanism is employed.

Assumptions used in cost estimating, including discount rate, methodology, and duration, should reflect the specific situation under consideration.

Who pays for these costs in the future and what are the options for financing them?

It was recognized that more than one party pays the costs of ICs. The parties who may be financially responsible include Federal, state, and local governments, the PRP, certain private entities, and society. It was noted that society and other entities continue to pay when IC's continue or fail. These would include the non-market costs to society, and the costs to future land owners, exposed individuals, and others.

Therefore, there is a need for appropriate financial assurances for these sites that would lead to better implementation, long-term effectiveness, and increased protectiveness from ICs. These financial assurances could include trusts, legal agreements, insurance, user fees, bonds, taxes, enforcement actions, non-profit and citizen group financial assurance mechanisms, and an oversight structure.

It was suggested that a Federal agency take on or group be established whose sole mission or priority is to assist, manage, and monitor ICs and that funding be provided to offset the normal priorities that tend to take precedence over this task.

Take Home Message

There is a need for appropriate financial assurances for implementing and ensuring the long-term effectiveness and the protectiveness of ICs.

Conclusion

The current process for estimating response costs does not accurately reflect implementing, monitoring, and the potential costs of failure for ICs. There are indirect costs for ICs that should be included in the decision making process. The cost estimate for ICs should be refined throughout the Superfund process as new information becomes available. Stakeholders should be included in the development of the IC cost estimate and tools and guidance should be developed to assist EPA and states in developing IC cost estimates. The NPV and the 7% discount rate is not always the appropriate methodology to be employed, and the determination of what is the appropriate methodology should be based upon the availability of financial assurances. There are a number of parties that are involved in paying for ICs. Multiple methods

and financial assurances should be encouraged to ensure costs are covered. Lastly, there is also no incentive or goal for agencies to improve their consideration, implementation, and evaluation of ICs.

Other Take Home Message

It is critical that measurable goals and corresponding incentives be developed to encourage agencies to improve their consideration, implementation, and evaluation of ICs.

IC Planning and Implementation Breakout Group Summary

Statement of the Work Group's Purpose

The purpose of the IC planning and implementation work group was to flesh-out and delve into the issues faced by RPMs, states, tribes, localities and communities when planning and implementing ICs. Participants discussed various topics related to IC planning including: general planning, stakeholder cooperation/coordination and capacity; IC selection; implementation; state/local statutes and regulations; funding/resources; IC language; cost; community involvement; enforcement; and monitoring.

Summary of the General Dialogue

As an introduction to the IC planning and implementation work group session, the EPA technical expert presented several issues faced by EPA when planning and implementing ICs and some steps of the IC process. Questions were dispersed throughout the introduction to encourage critical thinking on the issues by the participants.

Planning

- The key to IC planning is to start planning early. How early is early?
- Will your engineering controls need additional protection?
- Who is responsible for development and implementation?
- There are two main groups to consider: 1) stakeholders (e.g., PRPs, the community, property owners); and 2) Co-regulators/ implementors (i.e., those with legal responsibility)
- Coordination and cooperation amongst everyone is needed

Selecting ICs

- Layering of ICs

Designing ICs

- When and who puts ICs in place?
- When will the IC terminate?
- Where are the particular places for tracking to occur?
- Notification issues (e.g., who notifies successors)
- Training - what kind is needed?
- Documentation - what is necessary?

Implementation

- Who is on the team?
- What about an interim system?

Monitoring

- What kind of frequency is needed?
- How do you know if an IC has been breached and what to do if it happens?
- Who enforces?
- How does the Fund-lead O&M manual and O&M plan developed for Fund-lead sites play

into monitoring?

The EPA expert concluded the introduction by posing the following questions directly to the participants.

- How do you see yourself in this?
- What are the key factors and elements?
- What is your experience?
- What are the critical documents?
- How do we ensure long-term is longer than our careers?

A participant then suggested that it might be helpful if everyone in the group identified their biggest IC issues or concerns. The participants identified more than 40 issues and concerns as represented below.

- A lack of coordination between Federal Facilities and state regulators.
- Monitoring and enforcement at Federal Facilities by state or EPA (participant noted that in his experience DoD was of the opinion that the states and EPA should have no role in monitoring and enforcing at federal sites).
- Misuse of ICs.
- How strong should ICs be designed? The participant noted that in the west, there is a common belief among people that the rules don't apply to them.
- How to prevent breaches through notification and reminders.
- How to measure of IC effectiveness.
- How long - in years - should ICs be planned?
- How do you correct ICs if there are flaws in them? If they fail?
- There is a need for a better understanding of state and local enforcement authorities so that those authorities can be applied to maintain ICs over the duration of the project.
- Once ICs are selected/identified, how do you get unwilling owners to record them?
- How can real estate and lending communities understand, monitor, and pay attention to ICs?
- There is a need for adaptive management policies to correct errors, use new information and technologies, and improve cost and effectiveness of ICs over time.
- Timeliness of instituting ICs before property is transferred.
- How to get owner "buy-in" to ICs.
- How can the Agency proposing ICs get "buy-in" from the local government?
- Can the Agency take responsibility for enforcement and monitoring of ICs?
- Identify ICs early on and evaluate effectiveness compared to engineered remedies using honest cost estimates.
- Explore working with municipal and county government with regard to enforcement, monitoring, and implementation with local codes.
- Explore ways to communicate issues such as different remedies (ICs versus other remedies), risk communication, costs.
- When EPA selects a remedy, all parties involved need to be agreeable to ICs for long-term monitoring and enforcement.
- Make explicit how a specific IC provides a specific protection against risk. Caution against using land use terms.
- How do we make sure that, over time, communities know of the ICs and why they are in

place?

- There needs to be more detail in RODs about the particulars of ICs (what, who and how over time). If ICs are not enforced in the ROD, then where? Five-year reviews are not enough.
- Where should IC details be written? E.g., in the SOW, CDs, or other documents (i.e. in an IC Plan)?
- There is a need to understand the link between risk assessment assumptions and assumptions in ICs.
- In addition to ICs, litigation should be considered as a potential tool to protect the remedy.
- There is a need to understand the relationships among the issues of environmental justice (EJ), urban sprawl, and ICs.
- How can EPA account for local community practices in the remedy? E.g. EJ issues; local consumption of fish; politics.
- How often and who should monitor and manage data about the site?
- Should PRPs and owners pay for costs of ICs? There is a need to better identify costs and appropriate parties to pay.
- Conflict between local land use or development plans and ICs may create problems. Early coordination between various players is important.
- The development of future use plans and risk assessment assumptions is important. Also, there is a need to account for changes in plans over time.
- Changes in the value of property can affect future use over time.
- How effective are environmental covenant statutes/programs? How are such statutes enforced? There is a need for common state standards and statutory language.
- To what extent are ICs considered when permits are issued for a new RCRA facility?
- For voluntary cleanups with no Agency involvement, when the owner sets up ICs, how can the information be captured?
- In state authorized RCRA programs, how do ICs work?
- In some states, there are differences across programs such as RCRA, CERCLA, and USTs.
- How early do IC plans need to be produced (e.g., during the RI? FS?)? What if the plan changes later? How should costs be incorporated?
- Tribes need to be involved in IC planning.
- When does an IC plan need to be updated? What should be included and when? Should future monitoring and enforcement be planned before the 5-year review is in place?
- Natural Resource Damage (NRD) versus ICs. A remedy that relies upon ICs over cleanup can increase NRD.
- In CERCLA cases, the ROD should consider the NRD claim versus costs and effectiveness of remedy. But that only addresses past NRD, not future.

On the second day of the workshop, the IC planning and implementation work group was divided into two smaller, more manageable groups to encourage discussion and the free-flow of information. Both groups attempted to address the issues and questions presented in the IC issue paper created for the participants prior to the workshop to help stimulate ideas on ICs. Topics including general planning for ICs, stakeholder cooperation/coordination and capacity; IC selection; implementation; state/local statutes and regulations; funding/resources; IC language, cost, and community involvement; enforcement; and monitoring were discussed.

Group A began with a discussion on general planning for ICs. The group agreed that early planning was essential, but the question of what is considered early became the focal point of the discussion. Also, involving all stakeholders at the onset of the process was considered important. Ideas generated from the exchange included:

- Planning for ICs should begin when you identify a technology remedy that will require an IC.
- There is a need to have detailed plan by the FS if ICs are to be contemplated.
- Develop early rapport (e.g., during investigation) with community stakeholders.
- Need to identify roles and responsibilities early.
- Community should express their opinions on the future land use to give indications of what remedy needs to be.
- The goal of early attention is to develop trust that will allow for solidarity. One participant used Jasper County as an example where the community did not want to be bothered by EPA or the state. Through educational outreach – much one-on-one interaction and knocking on doors – the community agreed to become involved by establishing an environmental committee.
- There are sometimes early misunderstandings of whether community has wherewithal to do ICs.
- Need to talk to local attorney who handles local land use issues. One way to “poison” local involvement would be to have a big public meeting by federal or state staff before learning the local government view.
- Under RCRA, there is typically not much public input up-front prior to remedy selection. Public input may not be talked about specifically, in part because the site is usually within property lines of the facility owner.
- There is a need to look at EJ implications as part of IC considerations and planning.

Group A then discussed the need for an IC plan as a stand alone document and the elements that are essential to the plan.

- IC plan needs to stand alone so you can easily share with many people.
- Carry the IC thread into the ROD, CD, and O&M plan as specifically as possible. Also make the IC plan part of the annual reporting plan.
- Need to be able to amend and revise (adaptive management).
- Who will develop the plan? For RCRA, this may be a joint effort of the owner, Region, state, and local government.

The group then discussed and a participant listed the elements of an IC Plan. At a later point in the discussion participants asked for clarification of when a full-blown IC Plan might be appropriate and when it might be a portion of the FS or design at a site. The elements that the group listed were as follows:

- 1) Determine what the performance goal is of the IC (e.g. keep a cap intact, keep people from using groundwater) AND how long IC needs to be in place, AND whether interim ICs are needed.
- 2) Determine what kinds of IC options are available to meet the performance goals (think

layering)

A) Proprietary Controls (e.g. easement/covenant)

1. Are there good state laws for proprietary controls?
2. For Superfund sites, is state likely to give EPA a 104(j) letter?
3. Who would be the appropriate grantee(s)?
 - PRPs? (How likely is it that PRP will be in existence in 30 years, or however long your IC needs to last)
 - State/local government? (Do they have the resources and desire to be grantee)
 - Private trust?
 - EPA? (Federal property acquisition procedures are extremely burdensome)
 - Community group?
4. How many properties would need proprietary controls? (The more properties, the less viable proprietary controls are.)
5. Are the property owners amenable to having their land encumbered by proprietary controls? If not proprietary controls are not a great option - at least you need to figure condemnation costs into the “cost” analysis.
6. Do a title search (what kind of title headaches will you encounter in acquiring proprietary controls? For example, are there lots of mortgages that must be subordinated? Conflicting easements? These problems can take years to resolve.)

B) Governmental Controls (e.g. zoning, local ordinances)

1. What kinds of options are available?
2. How many properties need to be encumbered?
3. Do you have local/governmental support?
4. What are the chances that the zoning will change (e.g. is the area gentrifying?)
5. Look at the layering options.

C) Deed Notice (Information device - not enforceable)

1. Consider this as an interim control until you can get other, more enforceable controls in place
2. Are you in a state that has regulatory penalties for violations of ICs in deed notices (e.g. Massachusetts)? Deed notices are a better option in these states.

D) RCRA permits

1. What are your options when property transfers?

E) Order/CD language

1. Consider restricting land use as an express term of CD/Order. Doesn't run with land, but can be great, enforceable interim ICs.
2. Consider stipulated penalties as a good deterrent to breach.
3. What are your order options for “innocent” property owners whose property use needs to be restricted? Look at CERCLA 106, RCRA 7003, DWA 1431

3) Determine what your IC “reminder plan” is going to be (to prevent breaches)

- A. Who will do the reminding, how often, how can you ensure that “reminding” will occur after you have retired?
- B. Some possibilities:
 - Concrete “on the ground” reminders, such as signs, stickers on monitoring wells, posted notices explaining ICs in plain English

- Periodic reminder letters/e-mails (think of ways to build this into other site activities e.g. letters that go out every time you do groundwater sampling.
 - Community meetings
 - Updating local officials who might be able to prevent breaches (e.g. building permit people)
 - One-call system
 - Registry
- 4) Monitoring Plan
 - A. Who will monitor?
 - B. How often?
 - C. Checklists?
 - D. Annual certifications of compliance?
 - E. How to ensure that monitoring will last as long as ICs?
 - F. Five year review
 - G. Is your IC still meeting performance goals?
 - 5) Enforcement (What to do if IC fails)
 - A. Who has authority to enforce? Do they have the resources/willingness needed to look at each type of proposed control?
 - B. At what point do you require a remedy exchange?
 - 6) How do you make IC plan amenable to adaptive management?
 - 7) Costs/Funding
 - A. How?
 - B. Can you get \$\$ up front?
 - C. Look at bonding possibilities.
 - 8) Training
 - 9) Have you met your performance goal
 - 10) Strategy for information exchange.

The discussion then focused on how to convince stakeholders that an IC may be needed. Group A agreed that good risk communication will help people be more receptive to restrictions on the land. In addition, participants relayed their experiences in providing incentives to stakeholders to encourage IC acceptance.

- Easements (construction restriction with EPA approval) and groundwater controls. A participant wrote a letter explaining the goal over long term implementation (increase property values by cleanup of the site, terminate with cleanup) for each use restriction and detailing how the IC will not restrict general use of the land. A letter was also sent to the mortgage company, which had concerns (PRP purchase vs. contamination as incentive.)
- In another situation, a governmental entity could not buy or lease the land that needed an IC (could have condemned the land, but condemnation would have delayed the process), so the entity offered the landowner the market value of the crop over the term of the lease (per acre price over the easement life).
- Other incentives and information tools included: providing support to local government in evaluating the impact of a redevelopment plan; EPA developing an interactive web site with a question/answer format that explains ICs; and a fact sheet and IC mailing list.

Group A then addressed the issue of IC selection, which evolved into a discussion on IC costs. The group agreed that an IC is an essential part of the remedy and should be evaluated by the same factors as other engineered parts of the remedy. This is the only way to provide a clear picture of implementability and cost -- comparable to an analysis of engineered components of remedies. Other points made included:

- In RCRA public health/human environment is primary then balancing based on cost.
- Having good cost analysis of alternatives can help with negotiations.
- Arizona is considering a cost cap policy on ICs. There is a concern about a large fund sitting there and being raided for another programs. Thinking of spreading the risk.
- Can't simply rely on cost, need to look at feasibility, implementability, and reliability over time.
- Layering of ICs imposes cost to the regulator/implementor.
- Costing ICs out. A participant noted that she would not be surprised if there was more cleanup, rather than ICs if the true costs were taken into account.

Group B's discussion of cost provided additional insight.

- Are ICs, given total costs, really cheaper? Do they reduce risks? The entire set of assumptions should be questioned.
- In the FS the cost analysis of ICs do not meet the same intellectual rigor as engineering cost analysis.
- At DOE radiation sites costs are so high ICs are cost effective despite the costs of long term monitoring.
- Costs are part of the remedy selection, so EPA has to evaluate costs. That evaluation should look at the need to run the ICs effectively.
- EPA calculation of costs are based on human health and environment. But local government has the say on future use. EPA should consult with local government regarding future use. Local governments need to be involved.
- IC cost estimates are not based on enough information and experience. EPA has to do its best with the information available, but should work to get better information.
- There is no calculation of lost "opportunity" cost to owners/neighbors.

For Group A, a discussion then ensued on IC implementation. Most participants agreed that an IC implementation plan needs to be detailed in a document that is enforceable and is generally available to everyone. Others added that a stand alone implementation plan could be developed and referenced in the ROD, SB or/and CD. A point was made that performance expectations and goals should be detailed somewhere -- possibly in the ROD -- but not necessarily locked in, as flexibility is still important. Other points included:

- The party responsible for the various implementation components should always be identified.
- Direction of where and how to get clarity and public comment should be in national guidance.
- Clarity in agreements can help communications continue as political winds change.
- Locals should be offered the opportunity to be involved in implementation plan development.

- Cooperative agreement for local involvement provides an incentive for involvement.
- May need to identify steps for frequency of involvement/reporting after completion.
- Communities change too - how do you maintain continuity?
- Frequency of monitoring should be site specific (e.g., every 3 years, every 18 months)
Current guidance calls for annual monitoring.
- There is a need for a tracking mechanism, and a need to make sure the tracking systems work.
- Long term maintenance - explore use of trusts.
- Implementation plan needs to include sending information to correct local official for registration.
- Annual inspections are a significant part of making ICs work. This could be paid by mandatory user fees or taxes.
- Identify when EPA authorities end and identify support from other authorities to keep the remedy protective - communication between project managers and local contacts is key.
- There is a need for real estate expertise. Financial problems may arise when plans are developed without real estate expertise. There is a big gulf between environmental technology and real estate.

Group A concluded its discussion with some thoughts on the issue of how to ensure that ICs stay in place with new/subsequent owners and the need for training. One participant mentioned that GIS systems and a registry may be options for maintaining information on ICs. In addition, most agreed that a need exists to identify a training program for cities and states and that internal governmental training is necessary.

Group B began its discussion on the monitoring and enforcement of ICs. Keeping “carrots” and “sticks” available as tools for ICs was deemed important, especially since government agencies have minimal funds to monitor and enforce ICs. Therefore to alleviate some of the burden placed on the agencies, supplemental funds/resources from the private sector and incentives are needed. Some of the “carrots” discussed included the Guardian Trust, insurance products that monitor/maintain, and state certifications. Agency audits and enforcement comprised the “sticks.” Other points made included:

- Monitoring is best done by localities. Federal officials don’t have ability to see all sites. Enforcement can be done by the federal government.
- Monitoring is critical, and has to be designed to address scofflaws
 - 1) Inspections should be done periodically
 - 2) Non-settlers may have obligations to inspect
 - 3) Local government, state and EPA have to play roles
 - 4) Notification of EPA should occur in the event of: a) breaches, b) problems, c) change in ownership/tenants
 - 5) Voluntary reporting by neighbors and others should be encouraged
 - 6) Training and education should take place for: a) owners, b) settlers, c) local government, and d) neighbors
 - 7) One call systems are helpful to prevent unsafe digging
- Funding mechanisms

- 1) Settlers pay for IC costs including oversight and monitoring costs.
 - 2) Explore fines or stipulated penalties in IC agreements.
 - 3) Responsible parties may pay to establish trust mechanisms; trustee would then maintain and enforce the IC.
- EPA shouldn't take land use power from local governments. There was a concern about the Guardian Trust because it removes local government.
 - "Sticks" – Enforcement is essential. There is a need for stipulated penalties in CDs and other IC enforcement documents. Federal officials are best situated to enforce ICs. Landowners are also critical to enforcement as they are the parties with the agreement.
 - ICs require institutions for oversight and maintenance. The costs of creating such institutions/systems should be included in the cost estimate.
 - Local government functions are not robust enough to effectively monitor and enforce ICs. This function can not be grafted onto local government institutions without an awareness of the cost of that decision.
 - Often EPA and local interests can join to raise enforcement to a higher visibility.
 - With Brownfields, when an IC instrument is set up, the language specifies who is responsible for monitoring and avenues for enforcement. Fees are built into the closing costs for monitoring and enforcement. Also, monitoring is done by a third party such as a private non-profit trustee.

A brief discussion then ensued on the merits and disadvantages of zoning as an IC option.

- ICs should be based on future uses. Zoning itself is based on health effects.
- But, zoning and land use change over time.
 - 1) Zoning itself isn't a fine enough tool. Need to look closely at what the code allows.
 - 2) Variances are often granted.
 - 3) Zoning can change over time, and therefore should be used as an ancillary tool. Need to layer ICs.
- Spot zoning must be avoided for the IC to remain viable.
- Local zoning and permitting are key.
- It is important to recognize the limits and original functions of zoning.

Group B's discussion turned to the challenges of appropriately documenting ICs. Most participants agreed that state and real estate attorney expertise is limited. Since ICs have not drawn national attention from the general public, it was noted that some state attorneys focus on more "important" issues. Determining how to maximize limited resources led to the IC documentation discussion. The following points were made:

- Maximize resources: Devise a standard IC protocol that can be turned into a site specific document (Texas has this)
- EPA and region could meet and agree on standard IC protocol language.
- The National Conference on Commissions of Uniform State Laws (NCCUSL) may be an appropriate vehicle to develop a IC uniform state hazardous waste law.
- To do ICs properly is very labor intensive on EPA personnel. One or two paragraphs in a ROD can require two years of meetings to draft.
- Local ordinances are easier to enact, but require local/community involvement.

- In private covenants, the state may agree to be a third party beneficiary for future enforcement.
- Need to be aware that each state has a different home rule status.
- In CERCLA cases, the ROD should take into consideration the Natural Resource Damages (NRD) vs. cost and effectiveness of remedy. However, this only addresses past NRD, not future.

Group B then addressed IC selection. Participants agreed that IC selection is closely related to planning and that ICs should be looked at during the feasibility study. One participant noted that it is EPA policy to consider engineering controls first and, if necessary, use ICs as a last resort. In addition, layering of ICs was deemed important, but unless there is a clear assignment of responsibility, there can be a lot of finger pointing. Other IC selection considerations included:

- The basic approach is that the evaluation of the alternatives, including ICs should be in FS as for other remedies. In FS first look is at engineering, then at ICs. Currently, all too often the component of ICs are not carefully considered in the FS.
- Should look at each control (see E2091 ASTM Guidance on ICs)
- IC alternative analysis: Look at those that make most sense. This is now done in the RD, but should be done in the FS.
- Negotiate the remedy – including ICs – with private landowners.
- Because the remedial process is so long, interim ICs may be necessary (perhaps even without notice).
- There have not been any studies on what types of ICs work best under what conditions.
- Prospective purchasers want strong and layered controls.
- Design should assume problems or potential failure and contain contingency plans on how to fix this.

Group B's discussion then addressed the use of title searches and ICs. A participant noted that a title search will identify easements, rights of way, etc., but not water, mineral and often environmental conditions. However, title companies will now look at environmental conditions, although they generally do not do so unless they are insuring against environmental risks. Using the title as the means to observe and enforce ICs, is a misuse of the title recordation system. It may be necessary, but not sufficient to implement ICs. Additionally, while it is possible to notify subsequent buyers, that does not protect against breaches that result in environmental problems. Further, as pointed out before, the use of the local government title recordation system imposes costs and establishes performance standards on a system not particularly designed to address environmental contamination. This can result in an overburdened and ineffective system.

Group B concluded its session by addressing community/stakeholder involvement. Participants agreed that early community/stakeholder involvement that is maintained throughout the IC life-cycle is necessary if ICs are to be effective. One participant noted that community involvement means negotiating the remedy – not just which ICs should be used, but first and foremost, what the remedy should be and whether ICs should be included. In general, the participants believed EPA culture is changing to be more open about negotiating remedies with

communities/stakeholders. More thoughts on the subject included:

- At Federal Facilities, RABs generally do not negotiate. Some RABs have negotiated remedies, but it does not happen automatically.
- Negotiations may require more up front work. But, if done properly, this results in more effective and faster implementation. This may be site and even person specific. If negotiated, underlying interests can often be addressed.
- Texas statutes require public meetings over future land use.
- Resources are an issue with EPA and local governments.
- One problem is that CERCLA has political problems. Remedy selection is seen as too slow. Time is not on the side of groups/organizations with few resources.
- For ICs it is not enough to simply hold public meetings. EPA must meet with implementing and enforcing local government people.

Points and Observations Summary

At the end of the workshop, the two groups reconvened to share their ideas and to provide any closing remarks. The points and observations provided below reflect the most important or recurring issues generated by the IC planning and implementation work group participants.

1. Participants recommended that EPA involve the community and other stakeholders in the remedy selection process (e.g. that EPA "negotiate the remedy" with stakeholders).
2. Early planning before the FS is needed as well as thorough and good planning. Guidance on developing an IC plan would be very useful. The group began an outline and identification of components and issues related to an IC plan.
3. An IC is an essential part of the remedy and should be evaluated by the same evaluation/factors as other, engineered parts of the remedy. This is the only way to provide a clear picture of implementability and cost -- comparable to analyses of engineered components of remedies.
4. All stakeholders (federal, state/tribal, local, community, owners, etc.) should be involved early on in the process to help establish relationships that may be carried throughout the entire IC process (from "cradle to grave"). Early rapport with community stakeholders should be developed during the site investigation.
5. It is important to ensure that the IC plan takes into consideration local land use and development plans. EPA should consult with local government regarding future use.
6. Real estate expertise is needed. Real estate attorney expertise should be available early on in the IC planning and implementation process. EPA should have a national plan to get real estate attorney services.
7. There is a need to define ICs in decision documents, specifically, and carry those IC

definitions throughout all documents (i.e. carry the IC thread into the ROD, CD, and O&M plan as specifically as possible and also as part of an annual reporting plan).

8. There is a need to allow flexibility to amend and revise ICs (i.e., “adaptive management”).
9. Training/ educational outreach should be provided. IC training should be provided from EPA to states/tribes/localities. In addition, there is a need for localities to provide training to the states and regions (RPMs) on local land use provisions/ordinances.
10. It is important to ensure that ICs stay in place following property transfers and that new nearby property owners and tenants are also aware of the ICs.
11. EPA should develop a menu of ICs available in each state.
12. ELI/ ICMA/ASTM have all done a lot of research/work on ICs. EPA should consolidate and distribute this work. ICMA has a list of ICs and other environmental resources on its web site.
13. There is a need for better guidance on estimating the life-cycle costs of ICs. Assumptions on cost should accurately reflect the costs of an effective IC strategy.
14. When considering ICs, look at the probabilities of success in operating and enforcing ICs.
15. There is a need for a system to report on the success of ICs to facilitate an analysis of how well ICs are working. Until there is a such a body of knowledge, EPA should review IC effectiveness annually or more frequently.
16. States should eliminate common law defenses to enforcement of covenants.
17. States should provide adequate enforcement and O&M money. States should also encourage and support local government O&M of ICs. Banks and developers should also be brought into this process.
18. The National Conference on Commissions of Uniform State Laws (NCCUSL) is moving to develop model state law on ICs. EPA and other stakeholders should participate in this effort.
19. If redundancy is to be effective, all levels of government should be tasked to enforce ICs and estimate costs appropriately.
20. EPA should put a bibliography or links on its web site.
21. EPA should develop minimum standards to apply during the FS to decide whether to use ICs.

22. EPA, states, tribes, and local government should share GIS information.
23. There is a need to understand that effective ICs are part of the remedy and should be paid for by PRPs.
24. The enforcement function can not be grafted onto existing local government institutions (e.g. building inspection). Local institutions do not have the expertise, legal authority, or institutional capacity to enforce ICs. There is a need to be clear on who has responsibility.
25. When developing ICs, EPA needs to go to other permit granting parts of the Agency to ensure compliance.

III. Model Language Breakout Group Summary

- This summary will be posted at a later date.

IV. Tracking Systems and Approaches Session Breakout Group Summary

Purpose

ICs comprise necessary and important parts of remedies because they help to protect against exposure to residual contamination at properties, and because they protect the integrity of the remedy. However, several unique characteristics of ICs make their use particularly challenging. First, the life-span of ICs at properties may begin as early as contamination discovery and can continue for as long as residual contamination remains above levels that would allow for unrestricted use or unlimited exposure. This means that ICs may remain on at a property indefinitely. Second, the long term effectiveness of ICs depends on diligent monitoring, reporting, and enforcement. Third, and a particularly challenging characteristic, ICs are often implemented, monitored, and enforced by an entity separate from the entity responsible for designing, performing and/or approving the remedy. Thus, an entity separate from the one who approves the remedy may be responsible for ensuring that a critical component of the remedy, the ICs, are both effective and reliable in the long term. Each of these characteristics - the IC life span, IC monitoring, reporting and enforcement requirements, and the multi-jurisdictional responsibility for IC effectiveness - stresses the importance of thorough, accurate, timely, and coordinated implementation, reporting and enforcement of ICs. One of the best tools to achieve these goals are IC tracking systems.

Given the usefulness of IC tracking systems, the purpose of this breakout session was to gather experts and interested participants (Participant List in Appendix A) to discuss IC tracking topics.

Day One - October 24, 2001

The facilitator opened the session by stating that the group was not responsible for coming to consensus on issues or to design a system but rather to vet the issues. She asked Mike Bellot, US EPA, to help to frame the issues surrounding ICs. He summarized much of the purpose section above. He added that a tracking system should allow for the rapid sharing of information. Also, he felt there should be a process to measure the success of the system. He expects that the implementation of a tracking system will take years to complete. Mike Bellot closed by informing the group of a planned meeting to be held in 2002 devoted to IC Tracking Systems and Approaches.

Next the facilitator divided the group into pairs. She tasked them with raising other IC tracking issues not identified in the IC tracking briefing paper. She also asked each pair to describe positive and negative aspects of an information management systems of their choice.

Between the issues raised in the briefing paper and the new ideas developed during the exercise, over 20 IC tracking discussion topics were identified. These are as follows:

- Types of IC systems that currently exist
- Current strengths and weaknesses of existing systems
- Large system pitfalls
- QA/QC process
- IC data collection methods: who puts it in, and the manner in which it is submitted

- Integrate legacy data
- Audiences of systems
- Identify decision makers
- Data elements - universe of items to track
- IC information management functions
- Capabilities and features
- Information sharing
- Technology and life-cycle management considerations
- Determine definition of IC: traditional or broader definition?
- Identify pitfalls of large systems
- Need to integrate different databases
- “System” ownership
- Funding of IC tracking systems
- Raise awareness of databases in existence to avoid redundancy
- Accessibility of data
- Define continued success for “system”
- Identify stakeholders

The group categorized the topics into a more manageable list. Next the group prioritized the topics. The following seven topics formed the core of the groups meeting agenda:

1. Objectives of an IC Tracking System
2. Audiences Served by IC Tracking Systems
3. “System” Ownership
4. Capabilities and functions of IC Tracking Systems
5. Data Collection and Elements Included within IC Tracking Systems
6. Descriptions of Existing IC Tracking Systems
7. IC Information Sharing and Integration with other IC Tracking Systems

Day Two - October 25, 2001

The IC Workshop participants from all breakout sessions were given an opportunity to visit the other breakout sessions at the beginning of day two. They were encouraged to review each group’s agenda and to make comments. After the breakout walkabout, the IC Tracking Session incorporated issues and ideas generated by the visiting IC Workshop attendees into their existing agenda. Guided by the facilitator, the group allotted 45 minutes for each of the seven topics. The following sections summarize each topic’s discussion. Highlights of each topic are identified first and then followed by additional discussion points.

Objectives of an IC Tracking System

The main objective of an IC Tracking System should be to protect human health and the environment. All other objectives should aid in attaining this main objective. The following points were raised as potential additional objectives of an IC Tracking System. Points have been grouped together within topics where applicable.

Policy Objectives

- Protect human health and the environment from exposure to residual contamination
- Communicate IC information to property users
 - Inform construction crews, utility workers and other property workers of potential hazards
 - Inform property use decision makers about ICs
 - Provide IC information to stakeholders, the public, and Congress
 - Integrate data to get the “big picture” of IC use and to provide a seamless flow of information to stakeholders
- Protect cleanup remedies
- Facilitate appropriate and responsible reuse
- Answer questions about trends in IC use - trend analysis
- Facilitate enforcement of ICs
 - Provide tool to help ensure ICs operate as intended
 - Identify IC failure and notify the appropriate parties to ensure compliance
- Transparency - show the public that they can believe in the agency’s (US EPA’s) ability to clean and reuse contaminated lands
- Keep track of routine monitoring of ICs
- Keep track of multiple IC protections (IC layering)
- Understand who the responsible parties are for zoning, deed restrictions, etc.
- Provide property specific data
- Provide as much information as possible
- Integrate system with state IC tracking systems, title industry data, and local permit information
- Provide customizable queries and standard reports
- Reports appropriate to the audience

System Objectives

- Secure system to prevent manipulation of data
- Design system with the capability to hold very large amounts of information
- Make it cost effective by leveraging existing systems and data
- Flexibility to change with increasing technical capabilities
- Data Quality
 - Ensure information is updated and accurate in perpetuity
 - Keep only reliable historical data
 - Timely information
 - Maintain audit trail
- Easy to use

Audiences Served by IC Tracking Systems

When developing an IC Tracking System it is important to clearly identify the system’s intended

audience, including the interested public, contaminated property owners, and local, state, and federal government agencies. All parties listed below would potentially be interested in the topic of IC Tracking Systems.

Local Audiences

- Environmental regulators
- Planning and zoning officials
- Permitting officials
- Code enforcers
- Deed recorders
- Public works officials
- Economical developers
- Public safety professionals
 - Fire department
 - Police department
 - Emergency responders
 - HAZMAT officials
- Public health officials
- School districts
- Potentially responsible parties (PRPs)
- Contractors
- Developers
- Insurers
- Investors

Tribal Audiences (similar functions as local regulators)

Federal Agencies

- Department of Defense (DoD)
- Environmental Protection Agency (EPA)
- Department of Energy (DOE)
- Department of the Interior (DOI)
- Army Corps of Engineers (ACE)
- Bureau of Indian Affairs (BIA)
- Department of Education (ED)
- Housing and Urban Development (HUD)
- Department of Justice (DOJ)
- Agency for Toxic Substances and Disease Registry (ATSDR)

State Audiences

- State economic development agencies
- State environment and health departments
- State departments of parks and wildlife
- Housing

- Departments of public safety
- National resource or land use agencies
- State water resources agencies
- Departments of transportation

Public Audiences

- Residents
- Businesses
- Property owners impacted by ICs
- Groups with historical ties to the property who may want to regain ownership
- Attorneys
- Environmental consultants
- Academia - studies, long-term efficacy, trends

Environmental Groups

“System” Ownership

Under the topic of system ownership, the group recognized that at any given property various government and some private entities may possess the authority and obligation to select, implement, monitor, and enforce ICs. Each entity, therefore, would possess some stake in an IC tracking system. The group discussed who should own, and relatedly, fund the development of any given IC Tracking System.

First, the group discussed the scenario where the state environmental agency constructed and populated an IC Tracking System that covered properties within the state’s jurisdiction. Under this scenario, the state would design the system to handle two distinct audiences: 1) an internal state agency audiences; and 2) an agency external audience.

The following thoughts were raised in reference to this conception.

- Perspective of us versus them could be negative
- Does the internal audience include the locals who must be responsible for the monitoring of the property? Local regulators?
- Each state is organized differently. This may cause problems.
- Does the technology exist to provide access to such a property?
- The system must be designed to reflect that the property and people proximate to the contamination are the most important aspect
- Internal and external audiences should be represented as equally important
- More categorization would be needed

The second method raised was a triangular association between potentially responsible parties (PRPs), state and federal agencies, and the local and city regulators with each entity occupying a corner of the triangle. The following thoughts were raised in reference to this theory:

- Tensions can exist between state and local government

- Hard to tell which of the three entities is the “owner”
- All three should be considered owners because all three have responsibilities
- Cities need a horizontally connected system that can link them to state and federal agencies via a vertical system
- Triangular relationship is the 1st line of defense for the remedy. But there are times when this system isn’t effective. There must be a 2nd layer - such as education.

The third method raised was to use the existing deed recorders to input information into an IC Tracking System. Because individual jurisdictions account for property ownership, if each jurisdiction were given a computer and software system to use to enter the data, this would create a system that linked the data and would allow regulators to access the data. If the state or federal government perceived a weakness they can step in and enforce the remedy. The following thoughts were raised in reference to this theory:

- This was done years ago but did not work because it didn’t protect the people.
- Philosophically agree; however, mechanically there are issues. Must understand how the localities function. There is no one size fits all.
- Huge expense to supply software and computers to each jurisdiction. Who pays?

There was no clear consensus or finding on the topic of system ownership.

Capabilities and functions of IC Tracking Systems

Capabilities and functions needed within an IC Tracking System should be discussed within the context of what human health and environmental professionals need the system to do in order for them to perform their jobs. A major need is a sophisticated search and query function to allow for easy accessibility of data. A major need also exists for graphical depictions of property boundaries, IC boundaries, and IC features. The group identified the following as capabilities and functions they would like to see in an IC Tracking System:

- Ability to warn of dangers
- Inform users of what can and can not be done at a property
- Dates of IC implementation, inspections, etc.
- Ability to determine compliance
- Geographic features (address, street intersection, property identifiers, interactive maps, search by zip code, etc.)
- Narrative detail to describe ICs with standardized icons for easy recognition
- Photographs of the property
- Alert when property has been tested positive for contamination (historical data)
- Ability to search other existing Web-based databases
- Cumulative impacts - note other contaminated properties within a mile radius
- Links to environmental justice properties
- Allow the public to “one stop shop” - ease of obtaining information
- See layering of ICs - visually with graphics?
- Geographically show permanent land features - very important for long-term visibility of ICs
- Geographic features shown horizontally and vertically

- Bilingual for ease of access along with Section 508
- Allow data input by those who are most informed about the property. Requires security
- Automatic email alerts
- Print exception reports to follow-up on properties that are not in compliance (Missed certification dates, etc.)
- How long should information be tracked? How long should a tracking system be maintained? 50 years? No clear consensus but many felt that 50 years was too short.
- Ability to update with review function (QA/QC)
- Back-up system and back-up data
- Ability to tailor system owned by cities and linked via the Web to state and federal agencies
 - ICMA could develop and distribute
 - Major security issues associated
- Answer questions about trends - trend analysis
- Report to stakeholders, public and Congress
- Integrate different data to get “big picture” and provide stakeholders with a seamless flow of information
- Understanding multiple protections (layering)
- Understanding who is responsible for zoning, deed restrictions, etc.
- Flexibility to change with increasing technical capabilities
- Identify IC failure and ensure that the appropriate parties are notified to ensure compliance
- Property specific
- Integration of data with other IC Tracking Systems
- Secure system
- Customizable queries and standard reports
- Easy to use
- Reports appropriate for the audience

Data Collection and Elements Included within IC Tracking Systems

The collection of data should be conducted in a way that ensures the proper information is gathered without bogging the system down with unnecessary data. All data should be property specific. A key point raised was the option of using the system to generate needed reports and documents (i.e., an IC implementation plan) versus simply pulling the data from those reports and then entering them into the system.

It was also noted that there are several owners of data during the ICs life span. They were identified as federal and state agencies, potentially responsible parties (PRPs), and localities. The potential data fields discussed are:

- Property location (address and location map with polygon and GIS coordinates)
- Property description
- Property name
- Nature of contamination
- Name and address of owner and operator of property
- Well and soil data points
- Current use of property

- Status of remedy (investigation, remedy chosen, type of IC, status of remedy)
- Date of IC start (scheduled start and actual start)
- Current and future land use zoning
- Reasonably anticipated land and ground water use
- Engineering controls
- Specific ICs chosen and why they were chosen to protect future decisions
- Goal of the IC
- What and where the IC applies
- Who holds the enforcement authority - be specific and state the consequences if/when the IC fails
- Surrounding land uses
- New pathway and property information
- Changing thresholds
- Judicial decisions
- Document of origin for the IC (PDF format?)
- Attach all documents in which the property is referenced
- Cumulative disparity (data in or data out?)
- The way in which the remedy contributes to environmental justice
- Who is affected - cultures affected?
- Who put the remedy in place?
- When is the remedy in effect and for how long?
- What is the instrument being used?
- How is it being enforced? Who is enforcing?
- Who monitors? What are the compliance dates?
- What is the cost of the IC implementation? Get these data elements from the life-cycle cost group.
- Comparison of the goal of the IC to the effect of the IC
- Human exposure - risk multiplier and epidemiological data
- Information that the IC has been implemented
- Timeline for the IC
- Show when the state has taken ownership over monitoring and enforcement with proof that EPA can require that they monitor and enforce the remedy
- O&M
- Risk management plans
- Level of reuse that the property can be maintained
- Dual ownership
- New data samples
- Deed recorder's information
- Accurate property ownership history
- Sandborn maps
- Historical photos
- Risk assessments and risk numbers used
- Is the property clean (phase 1 information)
- Permits from other programs

- Building permits

Day Three - October 26, 2001

Description of Existing IC Tracking Systems

Five workshop attendees representing EPA regions, states, cities and localities shared their knowledge of their existing or developing IC tracking systems with the group. None of the systems met all the objectives, functions, or capabilities that had been discussed by the group; however, all were interested in sharing their systems and the possibility of integrating their systems with one another. Those participants who shared information are listed below with their Web site addresses:

- Ignacio Dayrit, City of Emeryville, CA
www.ci.emeryville.ca.us
- Stan Hitt, EPA Region 6
www.gcr1.com/epa
- John Swartwout, New York State Department of Environmental Conservation
His example was a management system not accessible via the Web.
- Richard Engel, Naval Facilities Engineering Command Headquarters
<http://1163.88.245.106/NavyBrac>
- Ravi Arulananthum, California Environmental Protection Agency
<http://geotracker.swrcb.ca.gov>

Information Sharing and Integration

A key need of an IC Tracking System is the potential for information sharing and integration. Possibilities for how this might be attained were discussed among the group members. Electronic integration of data was preferred; however, it was noted that this would require that all the systems would have to work from the same standard definitions.

- Would like integration to be a capability
- What technology is required to allow data to be linked?
 - Commercial-off-the-shelf software (COTS)
 - Extensible Market Language (XML)
 - Metadata - this is data about data that gives it context and allows integration and categorization of data
- Standardization of data and definitions to allow information to accurately be exchanged
- Manual integration is expensive and time consuming
- Electronic integration - technology is there to make it happen
 - How is it organized?
 - Standard definitions needed
 - Set data quality standards
- Discuss within the context of how much data is desired to be tracked in the “system”
- Would like localities, states and federal governments working from the same standards
- ICs are not currently being broadly tracked. Great time to set the standards!
- Sort out the responsibilities of the different parties

- Better to link existing databases instead of creating a large super-database?
 - Would be a large and unwieldy system
 - Takes too long to implement such a system
- Data mart or warehouse
- Publicize the different Web-based tracking systems and allow interested parties to search them separately?
 - Must tag properties on the Internet as having IC information
 - Standardized definitions still need to be in place
 - Maintaining data quality would be difficult
 - Time consuming to search
 - How will information be reported? Standard forms?
 - Where will the information originate?

IV. Communities and ICs Breakout Group Summary

Purpose of the Community Breakout Group

The purpose of this breakout group was to discuss how EPA can engage communities to become involved in IC processes.

Summary of the Conversation by Key Points and Issues

EPA makes assumptions about what the community knows.

EPA and the community have one thing in common—land (and land use).

EPA must start by contacting community planners to review land-use plans and zoning. In the majority of cases, land-use plans will facilitate community involvement.

Communities are interested when waste is left onsite and when waste moves offsite, which directly affects the community through clean-up.

Communities tend to get involved later in the clean-up process. EPA should anticipate this.

Issue: How can EPA address a community that refuses to cooperate? For example, a private land owner will not allow EPA access to property for clean-up.

Federal facilities cannot have deed restrictions, but EPA can request a deed notice.

For notices, EPA needs to identify the people who might come into contact with the waste and people who can affect or interfere with the remedy.

Landowners and potentially responsible parties (PRPs) who are responsible for cleanup costs love ICs because the cost to them will be less than for active remediation.

EPA should evaluate long-term costs of ICs to determine which is more economical: monitoring an IC for life or cleaning up the site.

Federal facilities can serve as a model for policies and procedures. However, there are two problems: identifying users and the use of the land.

For empowered communities, there is a need for: an advisory board; technical assistance; and knowledge about the issues and policies.

Communities get upset when ICs are used to avoid clean-up.

Most communities do not know their rights or power in implementing ICs.

ICs should reflect the community's view on land use (i.e., how they want to use their land, what their expectations are).

Issue: Communities need access to information to make them an equal when at the table discussing ICs. Some communities do not know where to start.

Issue: Does an IC create a resource burden on local communities because of cost and time required to monitor ICs?

Issue: How can EPA work with a community that has divergent opinions?

Issue: How can EPA reconcile the land use opinions versus the land owner's wishes and the community? For example, a land owner may want to prohibit use of the land to protect him or herself from future liability, but the community wants to use the land.

Issue: What can be done with Environmental Justice communities? Specifically, how can EPA tap into their views?

Communities do not understand that they have a role in the process/ "a say" in influencing EPA cleanup or future land use. The first challenge is letting people know about the process and that they have influence. The onus is on EPA to educate the public about their role.

Communities do not make the link between land use options and associated ICs.

ICs should define the pathways to protect the community.

There is concern that communities have declining interest in a site as time goes by. Declining interest in the site by the community may be due to their belief that EPA is "taking care of it." Therefore, EPA should identify a few people early on who will act as a community representative.

To identify the appropriate people to represent the community, EPA should walk around the community and ask for volunteers.

EPA should educate the community that early involvement will affect land use.

EPA should hold conferences or meetings to educate the community about CERCLA and RCRA. This can be achieved in many ways because one-size does not fit all. EPA should consider monthly meetings, seminars, etc.

EPA should create a community relations plan to learn about the specific community and how the agency can reach them.

EPA should locate people who are willing to work with the Agency over time and let them know that they have influence in decision-making. However, it should be clear that participation does not necessarily mean satisfaction.

Success for the community is defined as, "People participate in the IC process, they know that they are listened to, and the adversarial relationship is weakened."

EPA may not want to use EPA personnel to garner support because of community apprehension. EPA may want to consider involving an activist group to facilitate community involvement.

Tribes are unique because they are a "community," but they also endeavor to be viewed as a government/regulatory agency. In addition, there are treaties between tribes and the U.S. government that affect land-use and should be reviewed before considering an IC.

Issue: EPA must be sensitive to the culture of the community. For example: An attendee's tribe does not hold public meetings in the EPA-fashion. In addition, it is offensive to hold a meeting during the supper-hour and not provide food. It is important for EPA to be sensitive to culture to ensure a successful meeting.

During the risk assessment stage, EPA should encourage communities to get involved, because their input in the early on will affect the eventual outcome.

Issue: Who is responsible from EPA's project team for community involvement?

There tends to be much flurry by EPA around the remedy selection, but after the remedy is in place, the agencies leave. From the community's perspective, EPA has no method to keep in touch with the community nor a method to track the effectiveness of the IC.

EPA should look at sites in a historical perspective. EPA should know how the site came to be and how the community is involved. It could be that the community knew of the contamination years before EPA came in.

People may not be interested in meetings, but that does not mean that they are not interested in their community. For example, in communities of color, lack of interest in attending a meeting could be because they have larger social factors/concerns, such as crime, drugs, financial worries, that take precedence over an EPA site. One attendee suggested that paying the members of the local community to attend meetings would garner more interest. In addition, PRPs can use these internal social factors against a community.

Turnover of EPA personnel affect community participation, because trust was built with a person not the agency. EPA should build incentives to keep trusted people in their positions. The personnel leaving should help the transition for the replacement. There should be a meeting to discuss the history of the site and remedy during transition.

EPA does not view the community holistically. For example, an EPA official may focus on a specific issue (contaminant to water) and enforce a specific statute (CERCLA or RCRA); however, the community does not compartmentalize. The community covers all the issues in its surrounding environment.

Communities may define "environment" differently than EPA. A community may include traffic, schools, crime and litter in its definition.

EPA staff energy varies. Some personnel are enthusiastic and work with the community, others do not.

EPA should work at building trust with communities.

Some outside groups (i.e., activist groups) hinder that trust.

EPA views the community as both a help and a hindrance.

EPA can determine the community leaders by talking to people at schools, 7-11s and beauty shops.

From one attendee's experience, the EPA RPM will contact the community about once every three months, which is good. However, EPA's community involvement person only contacts the community when paperwork needs to be completed.

Open communication and response to feedback builds trust with the communities.

PRPs lawyers scare EPA away from community involvement to limit their liability in lawsuits.

Some sites are PRP-driven. PRPs work EPA and then use the system to defeat EPA. As a result, EPA needs a process to put the PRPs to the side and to work with the community.

There is a huge divergence between EPA regions because there is no communication.

Communities need a good lawyer to get anywhere.

PRPs donate money to politicians to get their way. Communities need to know that environmental issues are political. Communities need to organize to overcome obstacles. Communities must approach issues politically.

Issue: There is a problem when the community is affected environmentally by an industry that supports the community financially. Thus, there are divergent interests: some people are dependent on the “polluters” while others fight the “polluters.” How can EPA address both interests? A possible solution could be the presence of an outside facilitator.

People’s fears about losing their jobs because of environmental work conducted by EPA is a valid fear. EPA needs to find a common ground (e.g., health and safety). EPA also could identify job possibilities in the cleanup.

When looking into way to achieve environmental goals, EPA should consider the economic needs of the community. Perhaps, EPA may need to be less stringent about the environment in area where people are concerned about affording to feed their families.

In areas with economic issues, the environment is a marginal issue.

Activist groups forget the people rely on industry to live.

Communities have difficulty separating human health and the environment. “Sick environment makes sick people.” In addition, the environment is a luxury wealthy people worry about.

On the other hand, raising environmental issues can garner broader involvement and will help the affected communities. Some people are not concerned about illnesses in lower income communities, but if birds start dying then they become concerned and will work to cleanup the environment.

There is a significant difference between voluntary risks and involuntary risks.

EPA should consider conducting a “Community Impact Assessment,” to define issues with human health, housing, environment, etc.

EPA must address people’s fears, whether is it substantiated by science or not.

EPA should translate its documents in to plain English, Spanish, Vietnamese, etc.

EPA may provide a liaison for the communities to reduce jargon intimidation and to explain acronyms.

EPA should update its fact sheet on TAGs.

The Community Impact Assessment model suggests that EPA define the impact of a project on a community before the project begins. It requires a definition of “environment.” It creates a portrait of a community.

There must be trust. EPA earns trust by consulting before they go forward; responding to requests; use tools to teach people, and make an extra effort to communicate.

EPA public relations specialists do not replace community involvement by RPMs. Public relations experts should not just be the intermediary between EPA and the community.

Communication should be personalized.

Partnering is good except when “partners” have no power for decision-making.

Communities are frustrated because people in authority roles “do not look like us.”

ICs look good on paper, but it changes when you add people.

Trust is about what you deliver, not what you say.

EPA’s culture is dominated by technical people and lawyers. EPA does not have training in how to engage communities. The culture is hard to change because EPA is overworked and incentives are not based on community involvement, but on cleanup schedules. Incentives should be based on training opportunities and regular community involvement.

EPA has to understand that the community can help with decision-making. EPA should not discredit an opinion because the language is not correct (e.g. RCRA instead of CERCLA).

EPA should not structure meetings to prohibit open communication. Some people need to vent. EPA should not “control” the public.

EPA should embrace cradle-to-grave community involvement. EPA should identify at each step the appropriate methods to involve the community from decision-making to implementation. EPA should identify the appropriate points of contact in the community and get input before making a decision on an action.

Communities need to know that they can insist on more cleanup.

EPA guidance and policy should be available to the public through a repository.

EPA should determine assumptions about land-use. Reasonably anticipated land use may differ from current land use.

Remedial investigations should include land use assumptions because the analysis should consider use issues and resource use. Land use should drive the risk assessment.

Communication should be continuous to prevent surprises.

EPA should offer assistance to the communities. If EPA cannot help on a particular issue, the agency should direct the community to another source.

EPA needs to be flexible with ICs to anticipate a community’s changing land use needs. Options should not be forced on a community, but options should be offered.

EPA does not like to share power or resources with communities.

EPA has an “attitude” and a bad reputation, because people from the federal government think they are better than other people. People in the community do not participate because they

dislike EPA's attitude. EPA lawyer personalities, which are insensitive, turn off communities.

There is arrogance at EPA and in EPA documents. EPA is arrogant because it legally does not have to take the advice of the communities. Other factors influence EPA, such as funding and ease of remedy.

Communities believe the PRPs minimize the amount of money spent on cleanup. "They are not going to do the right thing, they are going to do the cheap thing." And EPA often sides with the PRPs.

Communities need to inform EPA about what they are doing. Communication is a two-way street.

Steps to improve community involvement:

- Understand the history of a community before you go in (traditions, values, etc.);
- Use a holistic approach (be aware of what else is going on in the community);
- Provide technical and non-technical assistance

The IC process does not always work— if the people who are poisoned are not benefitted by the process then the Government is not doing its job.

What EPA can change (directed to EPA attendees):

- Tweak the guidance for RPMs
- Guidance for ICs should focus on community involvement
- EPA tends to write guidance for program people, lawyers and community involvement specialist— these guidance documents should not be independent but brought together.
- Need site-specific templates to evaluate viability of ICs early on in the feasibility stages.
- Provide examples of "best practices" of community involvement
- Develop community interview questions

Other Comments:

Communities get used. Resources are taken away. EPA is guilty too. EPA's TAG money costs the community money. Educational institutes get money to study the health effects of a community, but the community gets no money. All Federal agencies hire people to come in and use the community.

Summary of the Recommendations

Several key points from the discussion include:

- One-size does not fit all. EPA should develop approaches that involve the specific community.
- It is important to understand the history of tribal governments and their jurisdiction.

- EPA should embrace cradle-to-grave community involvement—community should be involved very early in the process.
- Trust is fundamental in community involvement.
- EPA should practice adaptive management.

A Community Involvement Plan should include:

Initial definition of roles and responsibilities (define “community,” “environment,” and “jurisdiction”)

1. Communities should be consulted throughout the RI scoping and risk assessment
 - identify community and/or tribal government representatives
 - get input on potential land uses
 - clarify assumptions about land uses
 - consider local land use plans
2. Develop alternatives with the community
 - one alternative should be a non-IC, cleanup goal to non-restrictive use
 - communicate implications of IC to anticipate what selection means
3. Evaluate the alternatives with the community
4. Develop land use control and implementation plan
[first four steps should be reviewed before ROD]
5. Land use involvement
 - notification or information/education
 - monitoring of ICs
 - enforcement
 - reporting
 - adaptive management—relax restrictions if more cleanup occurs, pursue more cleanup if land use changes
6. Do implementation—monitoring and education components
7. Conduct periodic reviews
 - five-year review to check on what is working
 - look to see if things are available to advance the cleanup
 - at four-year mark, EPA should reach out to community with interviews
 - if conditions change, EPA may need to revisit earlier

Community involvement plan should not be stagnant—needs to be revised as site controls continue.